Please amend the application as follows:

In the Claims

Please amend Claims 1-3, 9, 14, 23 and 24 as follows:

1. (Twice amended) A recombinant vector [for introducing DNA into an eucaryotic cell, the vector] comprising, in operable linkage,

a) retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and

b) one or more coding sequences wherein at least one sequence encodes for a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative [thereof] which is a part, analogue or homologue of the antimicrobial peptide and wherein the antimicrobial peptide is not defensin.

2. (Twice amended) The recombinant vector according to Claim 1 comprising in operable linkage,

a) a 5' long terminal repeat region comprising the structure U3-R-U5;

b) one or more of said coding sequences wherein at least one sequence encodes for a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative [thereof] which is a part, analogue or homologue of the antimicrobial peptide and wherein the antimicrobial peptide is not defensin; and

c) a 3' long terminal repeat region comprising a completely or partially deleted U3 region wherein said deleted U3 region is replaced by a polylinker sequence, followed by the R and U5 region to undergo promoter conversion.

3. (Amended) The recombinant vector according to Claim 1, wherein said coding sequence encodes the amino acid sequence of a peptide selected from the group consisting of: melittin; premelittin; prepromelittin; cecropin; prececropin; preprocecropin; magainin; apidaecin; [defensin]; parts, analogues and homologues thereof; and combinations thereof.

9. (Twice amended) A recombinant retroviral vector system comprising:

a) a recombinant vector [for introducing DNA into an eucaryotic cell, the vector] comprising, in operable linkage,

i) retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and

ii) one or more coding sequences wherein at least one sequence encodes for at least one naturally occurring therapeutic antimicrobial peptide or a biologically active derivative [thereof] <u>which is a part, analogue or homologue of the antimicrobial peptide and wherein the antimicrobial peptide is not defensin</u>; and

b) a packaging cell line harboring at least one retroviral construct coding for proteins required for said retroviral vector to be packaged[,].

14. (Amended) A method for introducing nucleotide sequences into [a] <u>an isolated</u> cell population comprising infecting the cell population with the recombinant retroviruses produced by the recombinant retroviral vector system according to Claim 9.

23. (Twice amended) A method for the treatment of a disease selected from the group consisting of: a genetic defect, cancer and viral infections, comprising administering to a subject in need thereof a therapeutically effective amount of a recombinant retroviral particle produced by transfecting a packaging cell line harboring at least one retroviral or recombinant retroviral construct coding for proteins required for said retroviral vector to be packaged, with a recombinant retroviral vector comprising, in operable linkage,

a) retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and

b) one or more coding sequences wherein at least one sequence encodes for a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative [thereof] <u>which is a part, analogue or homologue of the antimicrobial peptide and wherein the antimicrobial peptide is not defensin</u>.

24. (Amended) The method according to Claim 23 wherein the coding sequence of encodes the amino acid sequence of a peptide selected from the group consisting of: melittin; premelittin; prepromelittin; cecropin; prececropin; preprocecropin; magainin; apidaecin; [defensin]; a part, analogue and homologue thereof; and combinations thereof.

Please add the following claims:

---27. A recombinant vector comprising, in operable linkage,

a) retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and

b) one or more coding sequences wherein at least one sequence encodes for a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative which is a part, analogue or homologue of the antimicrobial peptide and wherein the antimicrobial peptide is an anti-retroviral peptide and/or an anti-tumor peptide.

28. The recombinant vector according to Claim 27 comprising in operable linkage,

a) a 5' long terminal repeat region comprising the structure U3-R-U5;

b) one or more of said coding sequences wherein at least one sequence encodes for a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative which is a part, analogue or homologue of the antimicrobial peptide and wherein the antimicrobial peptide is an anti-retroviral peptide and/or an anti-tumor peptide; and

c) a 3' long terminal repeat region comprising a completely or partially deleted U3 region wherein said deleted U3 region is replaced by a polylinker sequence, followed by the R and U5 region to undergo promoter conversion.

29. The recombinant vector according to Claim 27, wherein said coding sequence encodes the amino acid sequence of a peptide selected from the group consisting of: melittin; premelittin; prepromelittin; cecropin; prececropin; preprocecropin; magainin; apidaecin; parts, analogues and homologues thereof; and combinations thereof.

30. The recombinant vector according to Claim 29, wherein said polylinker sequence comprises at least one unique restriction site and, optionally, at least one insertion of a heterologous DNA fragment.

31. The recombinant vector of Claim 30 wherein said heterologous DNA fragment regulates the expression of at least one of the coding sequences of said retroviral vector, and comprises at least one or more elements selected from the group consisting of: regulatory elements and promoters.

32. The recombinant vector according to Claim 27 further comprising at least one non-coding sequence selected from the group consisting of: regulatory elements and promoters, which regulate the expression of at least one of the coding sequences.

33. The recombinant vector according to Claim 32, wherein said regulatory elements and promoters are regulatable by transacting molecules.

34. The recombinant vector according to Claim 30, wherein said heterologous DNA fragment encodes a peptide selected from the group consisting of marker peptides, therapeutic peptides, cell cycle regulatory peptides, tumor suppressor peptides, antiproliferation peptides and cytokines.

35. A recombinant retroviral vector system comprising:

a) a recombinant vector comprising, in operable linkage,

i) retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and

ii) one or more coding sequences wherein at least one sequence encodes for at least one naturally occurring therapeutic antimicrobial peptide or a biologically active derivative thereof which is a part, analogue or homologue of the antimicrobial peptide and wherein the antimicrobial peptide is an anti-retroviral peptide and/or an anti-tumor peptide; and

b) a packaging cell line harboring at least one retroviral construct coding for proteins required for said retroviral vector to be packaged.

36. The recombinant retroviral vector system according to Claim 35, wherein said retroviral vector comprises, in operable linkage,

a) a 5' long terminal repeat region comprising the structure U3-R-U5;

b) one or more of said coding sequences; and

c) a 3' long terminal repeat region comprising a completely or partially deleted U3 region wherein said deleted U3 region is replaced by a polylinker sequence, followed by the R and U5 region to undergo promoter conversion.

37. A retroviral particle produced by the recombinant retroviral vector system according to Claim 35 after transfecting the packaging cell line with the retroviral vector system.

38. A retroviral provirus produced by infection of target cells with a recombinant retroviral particle according to Claim 37 whereby the U3 sequence duplicated during the process of reverse transcription in the infected target cell and appears in the 5' long terminal repeat and the 3' long terminal repeat of the resulting provirus, and the U5 of the 5' long terminal repeat duplicated during the process of reverse transcription in the infected target cell and appears in the 3' long terminal repeat and in the 5' long terminal repeat of the resulting provirus.

39. The retroviral provirus of Claim 38 wherein said polylinker comprises heterologous DNA.

40. A method for introducing nucleotide sequences into an isolated cell population comprising infecting the cell population with the recombinant retroviruses produced by the recombinant retroviral vector system according to Claim 35.

41. The method of Claim 40 wherein the cell population is selected from the group consisting of: human cells and animal cells.

42. A method for introducing nucleotide sequences into a mammal comprising infecting the mammal with the recombinant retroviruses produced by the recombinant retroviral vector system according to Claim 35.

43. A method of treating an individual having at least one disease selected from the group consisting of: tumors and retroviral infections, comprising administering the recombinant vector of Claim 27 to the individual.

44. A method of treating an individual having at least one disease selected from the group consisting of: tumors and retroviral infection, comprising administering the recombinant vector of Claim 35 to the individual.

45. A pharmaceutical composition containing a therapeutically effective amount of a recombinant retroviral particle according to Claim 37.

46. mRNA of a retroviral provirus according to Claim 38.

47. RNA of a vector according to Claim 35.

48. An isolated host cell infected with a virion according to Claim 37.

49. A method for the treatment of a disease selected from the group consisting of: a genetic defect, cancer and retroviral infections, comprising administering to a subject in need thereof a therapeutically effective amount of a recombinant retroviral particle produced by transfecting a packaging cell line harboring at least one retroviral or recombinant retroviral construct coding for proteins required for said retroviral vector to be packaged, with a recombinant retroviral vector comprising, in operable linkage,

a) retroviral vector DNA or at least a portion of the retroviral vector DNA comprising elements necessary for infection and direction of expression in target cells; and

b) one or more coding sequences wherein at least one sequence encodes for a naturally occurring therapeutic antimicrobial peptide or a biologically active

derivative which is a part, analogue or homologue of the antimicrobial peptide and wherein the antimicrobial peptide is an anti-retroviral peptide and/or an anti-tumor peptide.

50. The method according to Claim 49 wherein the coding sequence of encodes the amino acid sequence of a peptide selected from the group consisting of: melittin; premelittin; prepromelittin; cecropin; prececropin; preprocecropin; magainin; apidaecin; defensin; a part, analogue and homologue thereof; and combinations thereof.

51. The method according to Claim 49 for the treatment of human immunodeficiency virus infections comprising administering to a subject in need thereof a therapeutically effective amount of said recombinant retroviral particle wherein the coding sequence of said retroviral vector encodes for the amino acid sequence of cecropin or biologically active derivatives thereof.

52. A non-human host cell infected with a virion according to Claim 47.

REMARKS

Claim Amendments

Claims 1-3, 9, 23 and 24 have been amended to indicate that the biologically active derivative is "a part, analogue or homologue of the antimicrobial peptide". Support for the amendment can be found, for example, in original Claim 3. Claims 1-3, 9, 23 and 24 have also been amended add the proviso that the antimicrobial peptide is not defensin. Support for the amendment can be found in the specification, for example, on page 9, line 17 (see also M.P.E.P. §2173.05(i)). Claim 14 has been amended to further define the cell population as "isolated".

Claims 27-52, which are directed to a recombinant vector comprising retroviral DNA and one or more coding sequences wherein at least one sequence encodes for a naturally occurring therapeutic antimicrobial peptide or a biologically active derivative which is a part, analogue or homologue of the antimicrobial peptide and wherein the antimicrobial peptide is an anti-retroviral peptide and/or an anti-tumor peptide, and uses thereof, have been added. Support for